SEQUENCE LISTING

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<120> Peptides Based on the Sequence of Human Lactoferrin and Their Use

<130> 003300 723

<140> US 09/743,107
<141> 2001 08 21

<150> PCT/SE99/01230
<151> 2000 09 29

<150> SE 9802441 7
<151> 1998 07 06

<150> SE 9802562 0
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<160> 102

<170> PatentIn version 2.1

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<220>
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<221> PEPTIDE
<222> (1)
<223> Amino acid 1 is Xaa wherein Xaa = Glu or no amino acid.

<220>
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<222> (2)
<223> Amino acid 2 is Xaa wherein Xaa = Ala or no amino acid.

<220>
<221> PEPTIDE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Cys or Ala.

<220>
<221> PEPTIDE

<222> (7)
<223> Amino acid 7 is Xaa wherein Xaa = Gln or Lys.

<220>
<221> PEPTIDE
<222> (11)
<223> Amino acid 11 is Xaa wherein Xaa = Asn or Asp.

<220>
<221> PEPTIDE
<222> (17)..(25)
<223> Amino acids 17 25 are Xaa wherein Xaa = Gly, Pro, Pro, Val, Ser, Cys, Ile, Lys, Arg

<220>
<221> MOD_RES
<222> (25)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to modification of the sequence consisting of aa 16 40 in human lactoferrin

<400> 1

Xaa Xaa Thr Lys Xaa Phe Xaa Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25

<210> 2
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
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<222> (1)
<223> ACETYLATION

<220>
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<222> (25)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 16 40 in human lactoferrin

<400> 2
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

Gly Pro Pro Val Ser Cys Ile Lys Arg
20 25

<210> 3
<211> 25
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<220>
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<222> (5)..(22)

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 16 40 in human lactoferrin

<400> 3
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

Gly Pro Pro Val Ser Cys Ile Lys Arg
20 25

<210> 4
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
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<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (23)..(23)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 40 in human lactoferrin

<400> 4
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro

1 5 10 15

Pro Val Ser Cys Ile Lys Arg
20

<210> 5
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<220>
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<222> (3)..(20)

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 40 in human lactoferrin

<400> 5
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro
1 5 10 15

Pro Val Ser Cys Ile Lys Arg
20

<210> 6
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification

of the sequence consisting of amino acids 18 31 in human lactoferrin

<400> 6
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 7
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<220>
<221> BINDING
<222> (5)..(9)
<223> LACTAM

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification

of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<400> 7
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 8
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 12 31 of the protein human lactoferrin

<400> 8
Val Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
1 5 10 15

Arg Lys Val Arg
20

<210> 9
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 12 18 of the protein human lactoferrin

<400> 9
Val Ser Gln Pro Glu Ala Thr
1 5

<210> 10
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 13 19 of the protein human lactoferrin

<400> 10
Ser Gln Pro Glu Ala Thr Lys
1 5

<210> 11
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 14 20 of the protein human lactoferrin

<400> 11
Gln Pro Glu Ala Thr Lys Cys
1 5

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 15 21 of the protein human lactoferrin

<400> 12
Pro Glu Ala Thr Lys Cys Phe
1 5

<210> 13
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 22 of the protein human lactoferrin

<400> 13
Glu Ala Thr Lys Cys Phe Gln
1 5

<210> 14
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 17 23 of the protein human lactoferrin

<400> 14
Ala Thr Lys Cys Phe Gln Trp
1 5

<210> 15
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 18 24 of the protein human lactoferrin

<400> 15
Thr Lys Cys Phe Gln Trp Gln
1 5

<210> 16
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 19 25 of the protein human lactoferrin

<400> 16
Lys Cys Phe Gln Trp Gln Arg
1 5

<210> 17
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 20 26 of the protein human lactoferrin

<400> 17
Cys Phe Gln Trp Gln Arg Asn
1 5

<210> 18
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 21 27 of the protein human lactoferrin

<400> 18
Phe Gln Trp Gln Arg Asn Met
1 5

<210> 19
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of

natural or artificial origin consisting of the amino acids in positions 22 28 of the protein human lactoferrin

<400> 19
Gln Trp Gln Arg Asn Met Arg
1 5

<210> 20
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 23 29 of the protein human lactoferrin

<400> 20
Trp Gln Arg Asn Met Arg Lys
1 5

<210> 21
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 24 30 of the protein human lactoferrin

<400> 21
Gln Arg Asn Met Arg Lys Val
1 5

<210> 22
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 25 31 of the protein human lactoferrin

<400> 22
Arg Asn Met Arg Lys Val Arg
1 5

<210> 23
<211> 8
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 23 of the protein human lactoferrin

<400> 23
Glu Ala Thr Lys Cys Phe Gln Trp
1 5

<210> 24
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 24 of the protein human lactoferrin

<400> 24
Glu Ala Thr Lys Cys Phe Gln Trp Gln
1 5

<210> 25
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 25 of the protein human lactoferrin

<400> 25
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg
1 5 10

<210> 26
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of

natural or artificial origin consisting of the amino acids in positions 16 26 of the protein human lactoferrin

<400> 26
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn
1 5 10

<210> 27
<211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 27 of the protein human lactoferrin

<400> 27
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
1 5 10

<210> 28
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 28 of the protein human lactoferrin

<400> 28
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg
1 5 10

<210> 29
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 29 of the protein human lactoferrin

<400> 29
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys
1 5 10

<210> 30
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 30 of the protein human lactoferrin

<400> 30
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

<210> 31
<211> 16

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 16 31 of the protein
human lactoferrin

<400> 31
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 32
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 13 31 of the protein
human lactoferrin

<400> 32
Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg
1 5 10 15

Lys Val Arg

<210> 33
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 14 31 of the protein
human lactoferrin

<400> 33
Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys
1 5 10 15

Val Arg

<210> 34
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 15 31 of the protein
human lactoferrin

<400> 34
Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val

1 5 10 15

Arg

<210> 35
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 17 31 of the protein human lactoferrin!

<400> 35
Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 36
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of

natural or artificial origin consisting of the amino acids in positions 18 31 of the protein human lactoferrin

<400> 36
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 37
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 19 31 of the protein human lactoferrin

<400> 37
Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 38
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 20 31 of the protein

human lactoferrin

<400> 38
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 39
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 21 31 of the protein human lactoferrin

<400> 39
Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 40
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 22 31 of the protein human lactoferrin

<400> 40
Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 23 31 of the protein human lactoferrin

<400> 41
Trp Gln Arg Asn Met Arg Lys Val Arg
1 5

<210> 42
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 24 31 of the protein

human lactoferrin

<400> 42
Gln Arg Asn Met Arg Lys Val Arg
1 5

<210> 43
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> PEPTIDE

<222> (2)..(10)
<223> Amino acids 2, 4, 6 and 10 are Xaa wherein Xaa = Gln, Lys, Asp, Asn or Val.

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 21 31 in human lactoferrin

<400> 43
Phe Xaa Trp Xaa Arg Xaa Met Arg Lys Xaa Arg
1 5 10

<210> 44
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to the sequence consisting of amino acids 21 31 in human lactoferrin

<400> 44
Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 45
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 21 31 in human lactoferrin wherein one aa has been substituted

<400> 45
Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 46
<211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin

wherein one aa has been substituted

<400> 46
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 47
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (12)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 47
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 48
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 19 31 in human lactoferrin wherein one aa has been substituted

<400> 48
Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 49
<211> 13
<212> PRT
<213> Artificial Sequence

<220>

<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (13)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 19 31 in human lactoferrin wherein one aa has been modified

<400> 49
Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 50
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 18 31 in human lactoferrin wherein one aa has been substituted

<400> 50
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 51
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 18 31 in human lactoferrin

wherein one aa has been substituted

<400> 51
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 52
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<400> 52
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 53
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<400> 53
Thr Lys Ala Phe Lys Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 54
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<220>
<221> BINDING
<222> (5)..(9)
<223> LACTAM

<400> 54
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 55

<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<220>
<221> BINDING
<222> (5)..(9)
<223> LACTAM

<400> 55
Thr Lys Ala Phe Lys Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 56
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<400> 56

Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 57
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)

<223> AMIDATION

<400> 57
Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 58
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<400> 58
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 59
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<400> 59
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 60
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresp. to a modification of the seq. consisting of aa 18 31 in human lactoferrin; lactams formed between aa 3 and 7, and 9 and 13

<220>
<221> BINDING
<222> (3)..(7)
<223> LACTAM

<220>
<221> BINDING
<222> (9)..(13)
<223> LACTAM

<400> 60
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 61
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresp. to a modification of the seq. consisting of aa 18 31 in human lactoferrin; lactams formed between aa 3 and 7, and 9 and 13

<220>
<221> MOD_RES
<222> (1)
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<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<220>
<221> BINDING
<222> (3)..(7)
<223> LACTAM

<220>
<221> BINDING
<222> (9)..(13)
<223> LACTAM

<400> 61
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 62
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to the sequence consisting of amino acids 17 31 in human lactoferrin

<400> 62
Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 63
<211> 15

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 17 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (15)
<223> AMIDATION

<400> 63
Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 64
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to the sequence consisting of amino acids 16 31 in human lactoferrin

<400> 64
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 65
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 16 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (16)
<223> AMIDATION

<400> 65
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 66
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to the sequence consisting of amino acids 15 31 in human

lactoferrin

<400> 66
Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

Arg

<210> 67
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 15 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (17)
<223> AMIDATION

<400> 67
Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

Arg

<210> 68
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 68
Ala Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 69

<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 69
Cys Ala Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 70
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 70
Cys Phe Ala Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 71
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 71
Cys Phe Gln Ala Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 72
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin

wherein one aa has been substituted

<400> 72
Cys Phe Gln Trp Ala Arg Asn Met Arg Lys Val Arg

1 5 10

<210> 73
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been modified

<400> 73
Cys Phe Gln Trp Gln Ala Asn Met Arg Lys Val Arg
1 5 10

<210> 74
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 74
Cys Phe Gln Trp Gln Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 75
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 75
Cys Phe Gln Trp Gln Arg Asn Ala Arg Lys Val Arg
1 5 10

<210> 76
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 76

Cys Phe Gln Trp Gln Arg Asn Met Ala Lys Val Arg
1 5 10

<210> 77
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 77
Cys Phe Gln Trp Gln Arg Asn Met Arg Ala Val Arg
1 5 10

<210> 78
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 78
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Ala Arg
1 5 10

<210> 79
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence

consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 79
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Ala
1 5 10

<210> 80
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 80
Cys Phe Gln Leu Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 81
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 81
Cys Phe Gln Trp Gln Lys Asn Met Arg Lys Val Arg
1 5 10

<210> 82
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 82
Cys Phe Gln Trp Gln Arg Asn Leu Arg Lys Val Arg
1 5 10

<210> 83
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 83
Cys Phe Gln Trp Gln Arg Asn Met Lys Lys Val Arg
1 5 10

<210> 84
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 84
Cys Phe Gln Trp Glu Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 85
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 85
Cys Phe Gln Trp Gln Glu Asn Met Arg Lys Val Arg
1 5 10

<210> 86
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence

consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 86
Cys Phe Gln Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 87
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Orn.

<400> 87
Cys Phe Gln Trp Xaa Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 88
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Nle.

<400> 88
Cys Phe Gln Trp Xaa Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 89
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (7)
<223> Amino acid 7 is Xaa wherein Xaa = Orn.

<400> 89
Cys Phe Gln Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10

<210> 90
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (7)
<223> Amino acid 7 is Xaa wherein Xaa = Nle.

<400> 90
Cys Phe Gln Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10

<210> 91
<211> 12
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 91
Cys Phe Gln Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 92

<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 18 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (12)
<223> AMIDATION

<220>
<221> BINDING
<222> (5)..(9)

<400> 92
Cys Phe Gln Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 93
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 93
Cys Phe Gln Trp Lys Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 94
<211> 12
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 94
Cys Phe Ala Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 95
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 95
Cys Phe Ala Trp Gln Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 96
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 96
Cys Phe Gln Leu Lys Lys Asn Met Lys Lys Val Arg
1 5 10

<210> 97
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 20 31 in human lactoferrin

<220>
<221> BINDING
<222> (5)..(9)

<400> 97
Cys Phe Ala Leu Lys Lys Ala Met Lys Lys Val Arg
1 5 10

<210> 98
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 18 31 in human lactoferrin

<220>
<221> BINDING
<222> (5)..(9)

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<400> 98
Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 99
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 20 31 in human lactoferrin

<220>
<221> PEPTIDE
<222> (3)
<223> Amino acid 3 is Xaa wherein Xaa = Gln or Ala.

<220>
<221> PEPTIDE
<222> (4)
<223> Amino acid 4 is Xaa wherein Xaa = Trp or Leu.

<220>
<221> PEPTIDE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Gln, Lys, Orn, Ala or Nle.

<220>
<221> PEPTIDE
<222> (6)
<223> Amino acid 6 is Xaa wherein Xaa = Arg, Lys or Ala.

<220>
<221> PEPTIDE
<222> (7)

<223> Amino acid 7 is Xaa wherein Xaa = Asn, Orn, Ala or Nle.

<220>
<221> PEPTIDE
<222> (8)
<223> Amino acid 8 is Xaa wherein Xaa = Met or Leu.

<220>
<221> PEPTIDE
<222> (9)
<223> Amino acid 9 is Xaa wherein Xaa = Arg or Lys.

<220>
<221> BINDING
<222> (5)..(9)

<400> 99
Cys Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Val Arg
1 5 10

<210> 100
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:a fragment of human lactoferrin consisting of the amino acids in positions 12 40

<400> 100
Val Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
1 5 10 15

Arg Lys Val Arg Gly Pro Pro Val Ser Cys Ile Lys Arg
20 25

<210> 101
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> of natural or artificial origin, corresponding to modification of the sequence consisting of amino acids 16 40 in human lactoferrin of SEQ ID NO. 2

<400> 101

Gly Pro Pro Val Ser Cys Ile Lys Arg
1 5

<210> 102
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> of natural or artificial origin, not a modification of the sequence consisting of amino acids 18 31 in human lactoferrin of SEQ ID NO. 99

<400> 102
Glu Ala Thr Lys

1